

ABSTRACT

The present invention provides an on-chip bioassay system which reduces preoperations including culture, and is highly versatile and capable of conducting high throughput analyses. A microfluidic chip for introducing a cell is fixed on the undersurface of a microporous chip composed of a substrate through which a plurality of micropores arranged like a lattice penetrate, and thus forming a plurality of microchannels between the microporous chip and the microfluidic chip for introducing a cell; a suspended cell is poured into a micropore through the channel; then a microfluidic chip for introducing a test substance is fixed on the upper surface of the microporous chip such that its plurality of microchannels for introducing a test substance are placed in a direction perpendicular to the channels for introducing a cell, and thus forming a plurality of microchannels between the microporous chip and the microfluidic chip for introducing a test substance; a test substance is poured through the channel and brought into contact with the cell in a micropore of the microporous chip; a level of effect of the test substance on the cell is detected in situ after a predetermined time, or at a predetermined time interval.